



JUNE 28 - 30, 2005 NORFOLK CONVENTION CENTER

Enterprise Network Vision

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PM

PMW 160

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Communications and Networking Session

Sponsored by
SPAWARSYSCOM
FORCEnet Chief Engineer





Current Fleet Network Status



- Current fleet Network architecture is fielded in the form of stand alone networks supporting current stovepipe functionalities
 - Architecture developed via “federation of boxes” vice as an “end to end capability”
 - Most of these networks have self contained sets of standard (Enterprise like) capabilities
 - Many employ different solutions to meet the same capabilities
 - This construct creates issues with cost, security, configuration control, footprint, heating, workforce requirements, training, etc, etc...

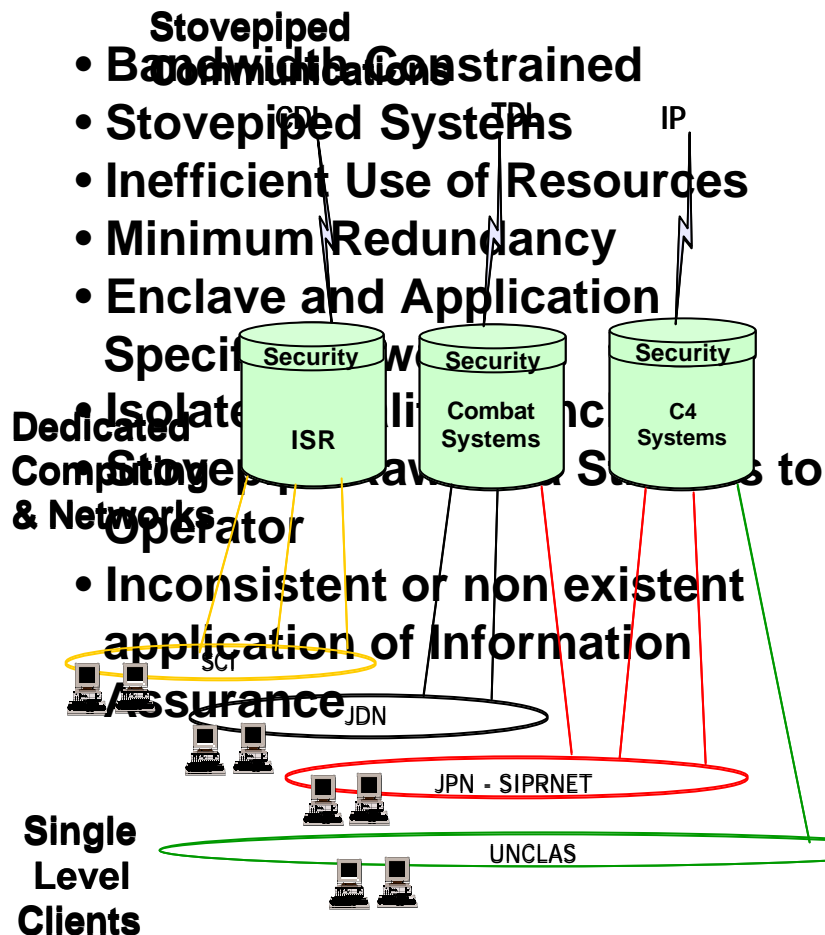
An enterprise Network can meet most of the users needs



Enterprise Network Vision

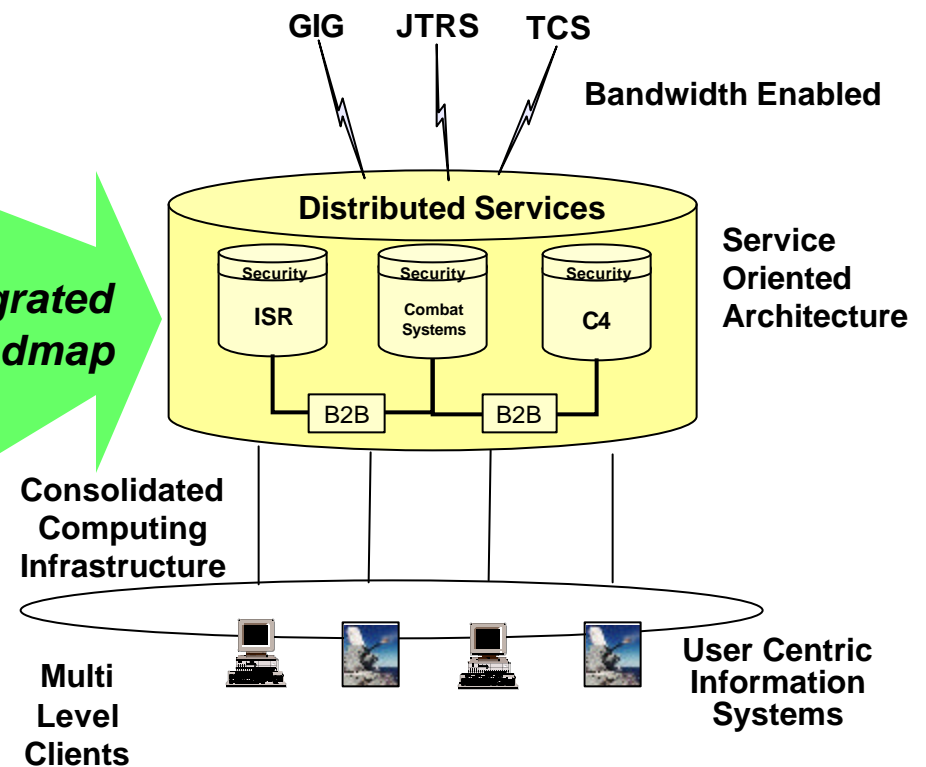


Current Environment



Enterprise Network Vision

Integrated Roadmap



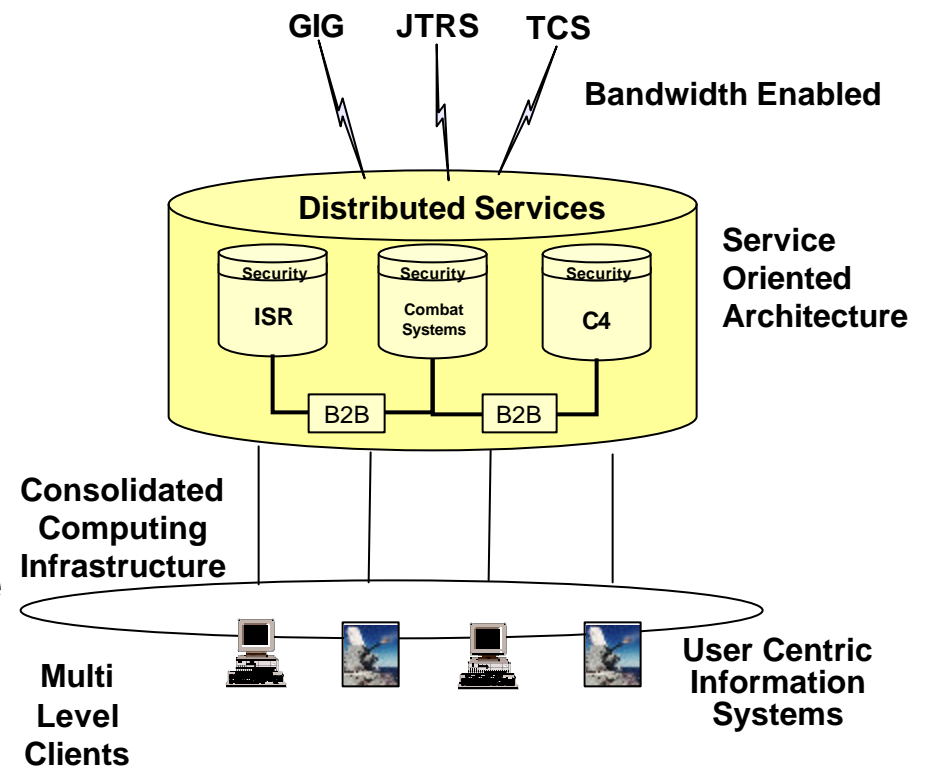


Enterprise Network Vision



A Capability Based Architecture

- Remove Bandwidth as a Capability Limit
- Multi-path Transport & Redundant Paths
- Capability on Demand
- Distributed Operations
- Customized Applications
- Multi-User Access
- Customized Delivery
- Assured Sharing
- Information Provided to Operator is Relevant, Timely, Accurate, and Usable
- Uniform and comprehensive application of security
- Global and common discovery

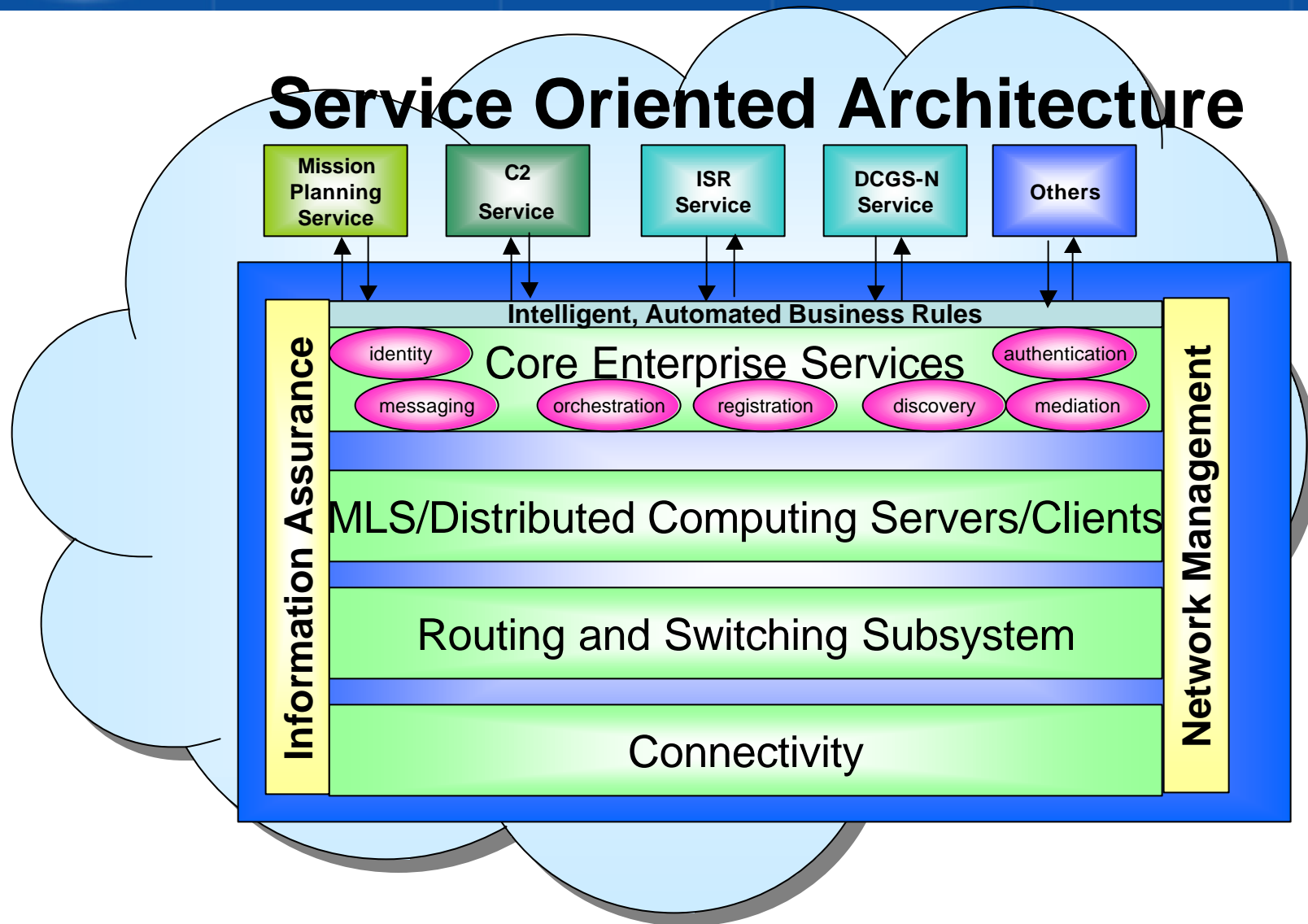




Enterprise Network



Service Oriented Architecture



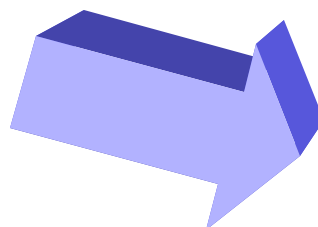


PMW 160

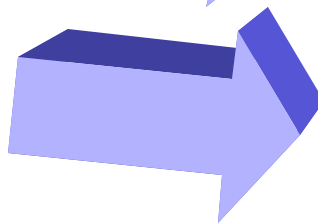
Evolution of the PMW160 Organization



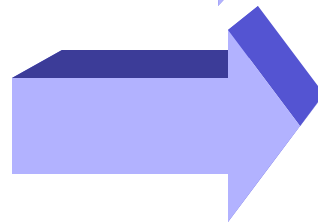
PMW 161
Information Assurance



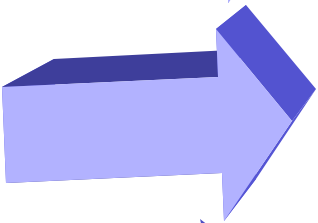
PMW 165
Afloat Networks



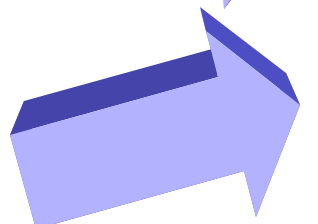
PMW 166
Naval Messaging



ADNS
(PMW 179)



JCDX
(PMW 157)





PMW 160

Program/Project Alignment



**Afloat
Networks
Carol Kim
PMW 160-1**

**ISNS
ADNS
SCI Networks
SubLAN
CENTRIXS-M
VIXS
Workstations (PCs)**

**CRYPTO &
Key Mgt.
Samir Othman
PMW 160-2**

**KG-3X
KG-40AR
DMS Infosec CAW
Crypto Products
EKMS
PKI
Identity Management
(Biometrics)
Secure Voice
Crypto Mod
Advanced Weapons Crypto
(AWC)**

**Enterprise
Services
Susie Hartzog
PMW 160-3**

**DMS
Tactical Messaging
NGDS
NMCP
COMPOSE
TDAMS
Network Management
Naval Regional Enterprise
Messaging (NREMS)**

**Network
Security
Mark Hakun
PMW 160-4**

**JCDX
CND
CDS
DII Guards
IA Readiness Services
NMCI IA
Radiant Mercury**



Current Network Environment



- **Today**
 - Up to 50 separate networks on an individual ship
 - Multiple classes of networks – varying levels of convergence and commonality, and interoperability
 - Physically separate security enclaves (MLS Solutions not widespread)
 - Legacy internal comms / separate voice networks (POTS/PBX, Hydra), etc...
 - Inconsistent application of Information Assurance
 - Not addressing the current threat!!

Why Can't We Migrate to an Enterprise Network Architecture?

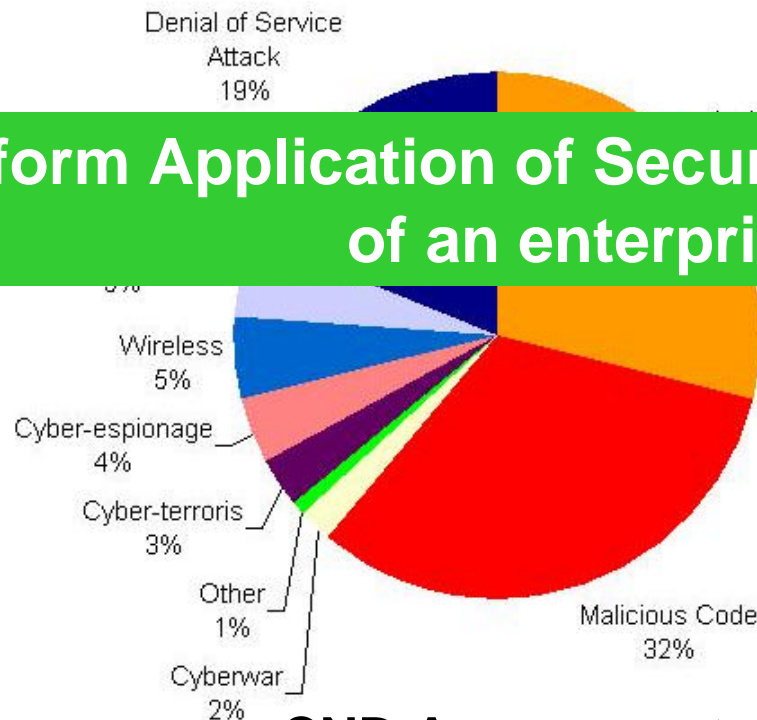


Security Threat



- Security Environment

Uniform Application of Security is a key building block of an enterprise Network



CND Assessment

Source: Final Report on the Department of Defense's 2004 Computer Network Defense Assessment, Dec. 3, 2004

The warfighters will not use a Network they can't trust!

Secure Network

+

Un-Secure Network

=

Un-Secure Network



Enterprise Network Consolidation Challenges



- Program Synchronization
- Latency/Determinism
- Mission Criticality
 - Shock/vibe
 - Redundancy
- Weapon vs. C4I Certification
- Configuration Management
- Storage Requirements
- Integration with all the Communities of Interest
- Security Enclave Boundaries
- **Culture**

Need to Employ an End-to-End Design Process!



Benefits



- Reduced Foot Print & Power
- Reduced System Administration Workload
- Configuration Management Control
- Greater & Uniform Security
 - How many of you want to manage IAVA?
- Tech Refresh & Simplified Refresh
- Lower Lifecycle Costs Across the Board
- Cross-Domain Solutions
- Improved connectivity
- Ability to implement a Service Oriented Architecture (SOA/FSI)



Enterprise Network Implementation



PMW160 Next Gen Products

Compose 4.X
CENTRIX B1k III
ISNS INC II
ADNS INC III
CND INC I
Crypto Mod
CDS

E2E Engineering

Service Oriented Architecture



PMW160 Presentations will address these components

- **Cross Domain Solutions – CDR Heller**
- **Computer Network Defense – CDR Currie**
- **Compose Core Services**
 - Terry Howell
 - Delores Washburn
 - John Andrews
 - Greg Settelmayer